ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE
6 - Management support	**0605805A - Munitions Standardization, Effectiveness & Safety**

	COST (In Thousands)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
	Total Program Element (PE) Cost	36413	36914	19606	20992	21296	22180	23235	23748
296	PYROTECHNIC RELIABILITY & SAFETY	821	896	1118	1148	1192	1200	1300	1500
297	Mun Survivability & Log	4548	4999	5044	5895	5905	5693	5560	5636
857	DOD EXPLOSIVES SAFETY STANDARDS	700	1512	1589	1659	1703	1946	2284	2325
858	ARMY EXPLOSIVES SAFETY MANAGEMENT PROGRAM	392	440	401	467	479	492	503	514
859	LIFE CYCLE PILOT PROCESS	21885	19148	3689	3769	3827	3981	4046	4102
862	FUZE TECHNOLOGY INTEGRATION	1865	2039	2138	2195	2241	2285	2329	2369
F21	NATO SMALL ARMS EVAL	938	1002	1007	1026	1048	1060	1056	1056
F24	CONVENTION AMMO DEMIL	5264	6878	4620	4833	4901	5523	6157	6246

A. Mission Description and Budget Item Justification: This Program Element supports continuing technology investigations. It provides a coordinated tri-service mechanism for the collection and free exchange of technical data on the performance and effectiveness of all non-nuclear conventional munitions and weapons systems in a realistic operational environment. It provides for NATO interchangeability testing (F21); Joint munition effectiveness manuals used by all services; development of standardization agreements (STANAGS) and associated Manuals of Proof and Inspection (MOPI); operation of the North American Regional Test Center (NARTC); evaluation of demilitarization methods for existing conventional ammunition (F24); evaluation of useful shelf life, safety, reliability and producibility of pyrotechnic munitions; and improvement of explosives safety criteria for DOD munitions via the DOD Explosives Safety Board (857). Pyrotechnic Reliability and Safety (296) supports pyrotechnic research, development and testing to identify, characterize and resolve reliability, safety, storage and manufacturing issues that impact production availability and field use of pyrotechnics. Project 296 will result in the development and demonstration of new, safe, reliable and environmentally acceptable munitions. Munitions Survivability and Logistics (297) will make Army units more survivable by applying technologies to reduce the sensitivity of munitions to unplanned stimuli (e.g. bullet impacts, fragment impacts, fast cook off, slow cook off, sympathetic detonation, shaped charge jets) and by testing and demonstrating munitions logistics system solutions that prevent or minimize catastrophic explosive events and accelerate ammunition resupply. Project 297 also supports the Army Insensitive Munitions (IM) Board's reviews. The Army Explosives Safety Management Program (858) was established in FY01. The U.S. Army Technical Center for Explosives Safety uses the funds in this project to evaluate current explosives safety standards and develop new, scientific and risk-based standards to meet U. S. Army explosives requirements. The Life Cycle Pilot Program (LCPP) (859) will assess production base capabilities and needs over the acquisition life cycle of various munitions and will address the producibility of ammunition including the transition to type classification and production, and the ability of the production base to cost effectively produce quality products on schedule. The Fuze Technology Integration program (862) will improve performance and lower the costs of existing proximity fuzes and enable new applications in submunitions and medium caliber fuzes, addressing advanced proximity fuze sensor technology, Micro-electromechanical Systems (MEMS), Safety and Arming (S&A) technology, and Electronic S&A (ESA) technology for smart munitions.

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B. Program Change Summary	FY 2006	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2007)	37530	18726	18585	19199
Current BES/President's Budget (FY 2008/2009)	36413	36914	19606	20992
Total Adjustments	-1117	18188	1021	1793
Congressional Program Reductions		-141		
Congressional Rescissions				
Congressional Increases		18600		
Reprogrammings	-1117	-271		
SBIR/STTR Transfer				
Adjustments to Budget Years			1021	1793

Change Summary Explanation: Funding:

FY 2007: Congressional increases of +16.2M for Life Cycle Pilot Process efforts (Project 859) and +$2.4M for Demil efforts (Project F24).

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0605805A - Munitions Standardization, Effectiveness & Safety**	**296**

COST (In Thousands)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
296 PYROTECHNIC RELIABILITY & SAFETY	821	896	1118	1148	1192	1200	1300	1500

A. Mission Description and Budget Item Justification: This project will support pyrotechnic research, development and testing to identify, characterize and resolve reliability, safety, storage and manufacturing issues that impact production availability and field use of pyrotechnics, including training realism. Project will result in the development and demonstration of new, safe, reliable and environmentally acceptable munitions.

Accomplishments/Planned Program:	FY 2006	FY 2007	FY 2008	FY 2009
Improved Delay Reliability	132			
Colored Smoke Study	258			
Mitigation of Perchlorates	262	294	371	
Service Life Studies	169	131		
Heavy Metal in Green Illuninants		307	307	175
Fragmentation Studies		138	168	
Nanoparticles for Pyro Items			272	381
Safer, More stable items				283
Multifunction Pyro Simulators				309
Small Business Innovative Research/Small Business Technology Transfer Programs		26		
Total	821	896	1118	1148

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0605805A - Munitions Standardization, Effectiveness & Safety**	**297**

COST (In Thousands)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
297 Mun Survivability & Log	4548	4999	5044	5895	5905	5693	5560	5636

A. Mission Description and Budget Item Justification: This project supports the Army Transformation by making Army units more survivable through the investigation, testing and demonstration of munitions logistics system improvements that prevent or minimize catastrophic explosive events and accelerate ammunition resupply. Key thrusts are munitions storage area survivability, insensitive munitions (IM) technology integration and compliance, weapon system rearm, munitions configured load enablers and advanced packaging and distribution system enhancements. Within each thrust, a broad array of solutions will be identified, tested, and evaluated against developed system measures of effectiveness. Optimum, cost effective solutions that enable the rapid projection of lethal and survivable forces will be demonstrated. The early stages of force deployment are especially critical. Theater ammunition storage areas are vulnerable and present the enemy with lucrative targets. These areas and distribution nodes contain the only available munitions stocks in theater. Loss of these munitions could cripple the force, jeopardize the mission, and result in high loss of life. This project mitigates vulnerabilities and ensures a survivable fighting force.

Accomplishments/Planned Program:	FY 2006	FY 2007	FY 2008	FY 2009
Develop scoring patterns and techniques for munitions packaging that will create a venting system during propellant burning to reduce internal pressures and minimize explosive reactions.	340	528		
Demonstrate new generation of low cost, lightweight, ammunition containers with enhanced IM performance. Evaluate advanced materials and processes for manufacturing, produce prototype containers, and conduct IM and structure integrity tests.		180	472	500
Demonstrate a less sensitive high-performance, melt-castable explosive to replace Composition B explosive in mortars and other warheads for reduced sensitivity to unplanned stimuli.	470	500		
Demonstrate low temperature gas generating mixtures that when added to explosives reduce reaction to unplanned stimuli. As temperature rises during cook-off, this additive produces pressure to rupture the projectile resulting in a controlled burning rather than detonation. FY05-Evaluated several cast cured explosive additives to mitigate violent reactions of munitions in a cook-off environment.	50			
Demonstrate new IM explosives formulated from new less sensitive basic explosive ingredients and binders to meet the most difficult threats (sympathetic detonation and shaped charge jet impact).			1078	1422
Conduct reviews of munitions in development and production to determine if they meet a DoD 5000.1 requirement to withstand unplanned stimuli, manage technology integration efforts to meet the requirement, update and maintain IM compliance status database, the IM waiver process for the Army, and the PEO Ammunition IM Strategic Plan.	513	437	472	542
Optimize munitions designs for IM compliance by modeling and simulating the reactions of these designs to unplanned stimuli in order to characterize the behavior and performance of energetic materials. FY05-Surveyed IM Modeling and Simulation capability, assisted IM technology development programs by applying modeling and simulation.	197			
Evaluate and demonstrate new explosive that could mitigate munitions violent reactions from Shaped Charge Jet Impact (SCJI).	300			
Develop standard test equipment and procedure to evaluate IM explosive candidates. This will ensure that generic Fragment Impact,	490	500	500	

Bullet Impact, Sympathetic Detonation, and Cook-off tests standardize rankings for new candidate IM explosives in a way consistent with their application in actual munitions.				
Conduct modeling and simulation to evaluate the effects of IM munitions vs. Non-IM munitions on selected weapon platforms to show the benefits of IM to system/soldier survivability.	177			
Reduce the sensitivity of Comp B explosive by modifying the formulation with a new binder. Successful implementation of this program will provide incremental IM improvements for large High Explosive filled munitions and achieve tremendous cost saving by using the Comp B for the ammunition stockpile.	140	297		
Demonstrate a new generation of IM booster material for a new family of IM explosives which cannot be initiated with a currently available booster.		530	600	600
Demonstrate new IM propellants formulated from new less sensitive basic propellant ingredients and binders to help munitions meet the most difficult threats (sympathetic detonation and shaped charge jet impact)				678
Redesign the rims/rings of current square rimmed cylindrical tank and artillery munitions containers to function as external cushioning (eliminating internal cushioning) and withstand stacking loads. Develop a lightweight, vented container cover. These improvements will reduce container weight and size and improve IM performance.	80			
Evaluate powder coating alternatives for painting ammunition/munitions containers to reduce hazardous waste and eliminate costly Volatile Organic Chemical (VOC) management associated with paints while insuring NBC survivability.	245	105		
Evaluate and recommend alternative materials and methods for strapping ammunition loads to pallets at load plants, depots, contractor facilities and in field operations.	175	50		
Investigate the application of next generation passive RFID tags to all possible ammunition packaging mounting scenarios to include internal and external.		100	100	
Investigate alternatives to both natural and processed wood ammunition packaging pallets and boxes that provide a cost effective, environmentally and phyto-sanitary compliant packing and unitization option.		130	200	
Design and demonstrate a tank ammunition container sized to be compatible with the Joint Modular Intermodal Container (JMIC) footprint in order to demonstrate rapid and seamless delivery of tank ammunition configured loads to the warfighter.		90		
Investigate and test alternative consolidation methods for small 60/81/120mm mortar and other similar systems. This will potentially eliminate packaging layers and enhance accessibility.			200	110
Investigate and test alternative methods (blankets, coatings, dunnage) to achieve reductions in solar loading on ammunition packaging.				110
Investigate, develop, and test combination structures of various materials to lighten and enhance performance of munitions packaging. Insert molding, adhesive bonding, composite fabrication techniques will all be leveraged.				140
Demonstrate application of nano-technologies for ammunition container coatings to improve anti-stick properties leading to less staining and easier cleanup during retrograde operations of all munitions.				140
Demonstrate a munitions storage area planning software tool that enables soldiers to quickly design a survivable and efficient in-theater storage area given known quantities and types of munitions and terrain features.	84			
Demonstrate standard sized inter-modal shipping modules for ammunition. The modules will interlock with each other, top to bottom, and	1287	1411	500	456

cargo platforms to form a stable, palletized, mixed-supply class configured load. They are automation friendly and rapidly re-configurable to meet changing user needs.				
Demonstrate a set of low cost visual condition indicators applied to ammunition to quickly determine item status due to exposure to extreme environmental conditions. Permits more efficient and responsive deployment and sustainment operations.			200	200
Increase ammunition logistics system responsiveness by demonstrating Information Technology enhancements and identifying changes in ammunition business practices needed to improve accountability from the depot to the weapon/soldier in the field.			217	400
Demonstrate a pallet level inventory system that automatically tracks munitions data as pallet quantities are changed. Technologies will be integrated into Enterprise Systems to improve logistics system agility and responsiveness.			300	300
Demonstrate a next generation of rapid ammunition tie down restraint systems to be compatible with commercial & joint military trailers and tactical trucks and military transportation platforms like: Container Roll in/On Platform (CROP), flatracks, 463L.			205	297
Small Business Innovative Research/Small Business Technology Transfer Programs		141		
Total	4548	4999	5044	5895

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0605805A - Munitions Standardization, Effectiveness & Safety**	**857**

COST (In Thousands)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
857 DOD EXPLOSIVES SAFETY STANDARDS	700	1512	1589	1659	1703	1946	2284	2325

A. Mission Description and Budget Item Justification: This program supports the Research, Development, Test, and Evaluation efforts of the DoD Explosive Safety Standards Board. It supports explosive safety effects research and testing to quantify hazards and to develop techniques to mitigate those hazards in all DoD manufacturing, testing, transportation, maintenance, storage, disposal of ammunition and explosives operations, and also to develop risk based explosives safety standards. Results are essential to the development and improvement of quantity-distance standards, hazard classification procedures, cost effective explosion-resistant facility design procedures, and personnel hazard/protection criteria.

Accomplishments/Planned Program:	FY 2006	FY 2007	FY 2008	FY 2009
Develop improved tri-service design procedures and improved computer codes for explosion-resistant structures. Initiate preparation of revised tri-service manual TM-51300.	50	255	279	314
Collect and analyze airblast/fragment/thermal data for revising DoD, NATO hazard classification.	171	234	245	246
Develop improved explosives and munitions tests and characterization data. Specifically, develop improved gap tests for rocket motors.	100	338	275	330
Develop improved DoD and NATO explosives safety guidelines for munitions storage, explosives and field operation facilities. Prepared revised Dod 6055.9-STD and 4145.26M.	100	204	269	223
Conduct other hazards analyses and expand/automate explosives safety databases. Develop improved Explosives Safety Mishap Analysis Module with links to accident reports.	40	258	313	261
Develop and improve risk based analysis tools for explosives safety. Develop sequence of operations prototype.	239	266	208	285
Small Business Innovative Research/Small Business Technology Transfer Programs		-43		
Total	700	1512	1589	1659

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0605805A - Munitions Standardization, Effectiveness & Safety**	**859**

COST (In Thousands)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
859 LIFE CYCLE PILOT PROCESS	21885	19148	3689	3769	3827	3981	4046	4102

A. Mission Description and Budget Item Justification: This project supports the implementation of the Single Manager for Conventional Ammunition (SMCA) Industrial Base Strategic Plan through technology investigations, model based process controls, pilot prototyping, and industrial assessments. It will assess life cycle production capabilities required for all ammunition families, address design for manufacturability to facilitate economical production, identify industrial and technology requirements, and address the ability of the production base to rapidly and cost effectively produce quality products. Cost Reduction is an important part of the Life Cycle Pilot Process (LCPP). LCPP provides the resources to prototype critical technologies and develop the knowledge base to establish cost-effective, environmentally safe and modern production processes in support of the Munitions Industrial Base transformation.

Accomplishments/Planned Program:	FY 2006	FY 2007	FY 2008	FY 2009
Continue ongoing technology investigations. Developed concept designs and plans to transfer life cycle pilot process technology into the supplier base.	1580	1341	1521	1567
Performed numerous production base readiness assessments to analyze present capabilities and identify trends in munitions and industrial technology. Identified over 700 single points of failure in the supplier base and began assessment of mitigation plans.	1080	841	750	762
Develop "pilot" prototype processes for critical ammunition end items and components necessary to establish quality, affordable, and environmentally safe production.	2225	2041	1418	1440
Establish framework and operations for the NJ Nanotechnology and Micro-Electromechanical Systems (MEMS) Consortium in support of ammunition production modernization.	3000	3888		
Develop a new x-ray inspection system for munitions using a Cadmium Zinc Telluride (CZT) detector for automated munitions inspections and surveillance.		972		
Continued development of processes to eliminate safety concerns and achieve net-shape manufacturing of advanced cluster energetic materials by developing novel coating and handling processes to support Insensitive Munitions (IM) explosive fill and transfer those processes to the supplier base. Developed advanced coating technology and began transfer of process technology to the explosive manufacturing Industrial Base.	2000	3888		
Continue established Government, Industry and Academia partnerships to support the development of aluminum Metal Matrix Composite (MMC) prototype technologies for munitions application. Established advanced casting capabilities for Metal Matrix Composites.	1500			
Rapidly prototpe and capture the manufacturing science of munition items utilizing nanotechnology.	1000			
Establish advanced "ManTech" pilot part processing technology cell, in conjunction with ARDEC Center for Manufacturing Science, to support metal parts fabrication processes determined to be core capabilities for munitions production.	1000			
Establish commercial partnership with ARDEC's Center for Manufacturing Science for the prototyping process and capturing production knowledge in the arena of forged and drawn metal parts.	1400	1944		

Assess manufacturing and alloy parameters that affect the performance of armor piercing ammunition and capture the knowledge that will allow new technology to be inserted into current ammunition.	1000			
Addressed manufacturing issues on munitions products to insure manufacturing knowledge is available for transfer into the Industrial Base. Investigated pilot processes for Single Point Failure mitigation and performed technology assessments in support of pilot scale prototyping of critical munition items.	2100			
Investigated pilot processes for Single Point Failure mitigation and performed technology assessments in support of pilot scale prototyping of critical energetic ingredients and components for munition items.		2722		
Develop technology for the sensing of depleted uranium munition residue in soils and water and investigate technologies for the physical separation of depleted uranium form soils/water.	4000			
Establish a focal point with the Defense Materials Technology Center to investigate innovative technology to support the needs of the munitions industrial base in metals manufacture.		972		
Small Business Innovative Research / Small Business Technology Transfer Programs		539		
Total	21885	19148	3689	3769

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0605805A - Munitions Standardization, Effectiveness & Safety**	**862**

COST (In Thousands)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
862 FUZE TECHNOLOGY INTEGRATION	1865	2039	2138	2195	2241	2285	2329	2369

A. Mission Description and Budget Item Justification: This program investigates maturing technologies and seeks potential candidates for integration on current fuzing and safe and arm devices. This program will implement these technologies into fuzing systems to preclude obsolescence and enhance performance of existing munitions. The program addresses two major areas: (1) risk mitigation and (2) block upgrades. The first area is risk mitigation, which will evaluate a second source Monolithic Microwave Integrated Circuit (MMIC) for artillery and mortar fuzes and a second source signal processor for mortars. Risk mitigation efforts will evaluate and demonstrate second sources for fuzing systems that may reduce cost by providing competition, and maintain production when sources or parts are no longer available. It will also allow for the performance enhancement of current ammunition items by conducting aging studies of major fuze components to detect and identify latent defects. The second major area is block upgrades, which will evaluate and perform studies on improvements to the Bunker Defeat Munition (BDM) impact sensor; increase commonality of fuze components and requirements across all hand grenade programs; determine feasibility of common training fuze for 60, 81, and 120mm mortar rounds; determine feasibility of common mortar safe and arm device components for M734A1, M783 Fuzes. Block upgrades will enable the introduction of the latest technologies into fuzing, keep the fuzing design current to avoid obsolescence issues, and add capabilities.

Accomplishments/Planned Program:	FY 2006	FY 2007	FY 2008	FY 2009
Risk Mitigation: Fabricated multiple wafer runs on the second source Monolithic Microwave Integrated Circuits (MMIC) effort, evaluated prototype devices and collected data for input to a follow-on wafer iterations. Fabricated and packaged 1st wafer run parts for the second source signal processor IC for the M734A1 application. Task order contract to Tyco-MACOM for second source MMIC transceiver for mortars and artillery. Second source component designs are completed and in fabrication. Evaluating storage reliability of current artillery batteries/determine possible solutions to battery electrolyte storage instabilities and upgrade a battery spin-airgun. Evaluate improvements to stockpiled training and war reserve fuzes to enhance capabilities and/or address deficiencies. Evaluate, new second sources for Monolithic Microwave Integrated Circuits (MMICs) used in artillery and mortar fuzes, evaluate new battery and electronics sources for current inventory fuzes. Evaluate second source for electronic safe and arm device (ESAD) components.	990	700	770	950
Block Upgrades: Field test performed for Bunker defeat Munition (BDM) impact sensor signature collection. Target impact signature data collected. Fabricated fuze electronics and conducted a ballistic test of prototype BDM Fuze. Leveraged low cost COTS components into a small, low power optical mortar tube exit sensor, for non-ferrous mortar tubes, final report will be provided to PM CAS as an alternate tube exit sensor. Investigate drop in proximity upgrades for current airburst fuzing for mortar, artillery and other munitions. Complete breadboard design of new artillery processor. Evaluate proximity sensor upgrades for M734A1. Determine feasibility of a common training fuze for 60,81, and 120mm mortar rounds. Evaluate a mortar common Safe and arm device for M734A1 and M783 rounds. Perform a study on commonality of fuze components and requirements across all hand grenades (M67, M84, and M18).1245	875	1282	1368	1245
Small Business Innovative Research/Small Business Technology Transfer Programs		57		
Total	1865	2039	2138	2195

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0605805A - Munitions Standardization, Effectiveness & Safety**	**F21**

COST (In Thousands)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
F21 NATO SMALL ARMS EVAL	938	1002	1007	1026	1048	1060	1056	1056

A. Mission Description and Budget Item Justification: This program assures complete interchangeability of small caliber and automated cannon-caliber ammunition and weapons among all NATO countries with all of the associated logistic, strategic and tactical advantages. Project involves development, maintenance and testing compliance of NATO standardization agreements (STANAGS) and staffing of the NATO North American Regional Test Center (NARTC).

FY 2008 funds maintain the NARTC and support NATO qualification/production testing of select ammunition types produced by Lake City Army Ammunition Plant (LCAAP) and second source manufacturers. Additionally, funds will continue to support the development of a STANAG and Manual of Proof and Inspection for 40mm Low Velocity Grenade ammunition and the facilitization of the NARTC/NTC for 40mm High Velocity Grenade Ammunition.

FY 2009 funds maintain the NARTC and support NATO qualification/production testing of select ammunition types produced by LCAAP and second source manufacturers. Additionally, funds will continue to support the development of a STANAG and Manual of Proof and Inspection for 40mm Low Velocity Grenade ammunition and the NATO qualification of US 30mm x 137mm and 40mm High Velocity Grenade Ammunition.

Accomplishments/Planned Program:	FY 2006	FY 2007	FY 2008	FY 2009
40mm High/Low Velocity Standardization	55	40	45	50
30mm Assessment Team	20	20	20	20
Maintain standardization of Qualified designs	90	100	100	100
New Ammo Design Qualification & NATO Nominated Weapon Evaluation	120	120	132	121
NARTC Equipment Purchases	50	50	80	95
Staff, Equip, Maintain NARTC	120	130	130	140
Aeroballistic Study of M856		143	90	50
Design & Refine Models	75	75	75	95
Design Optimal M855 Parameters	155			
Optimize Manufacturing Process	253	296	335	355
Small Business Innovative Research/Small Business Technology Transfer Programs		28		
Total	938	1002	1007	1026

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6 - Management support	**0605805A - Munitions Standardization, Effectiveness & Safety**	**F24**

COST (In Thousands)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
F24 CONVENTION AMMO DEMIL	5264	6878	4620	4833	4901	5523	6157	6246

A. Mission Description and Budget Item Justification: This project supports a continuing technology evaluation of demilitarization methods for all types of conventional ammunition in development, production, and storage, as well as conventional ammunition recovered from formerly used defense sites (FUDS). Project F24 will complete the development and demonstration of new, safe, and environmentally acceptable alternatives to open burning/open detonation (OB/OD), including recovery/recycle/reclamation equipment, and processes to reduce the extremely large stockpile of munitions in the resource recovery disposition account and munitions recovered from FUDS.

Accomplishments/Planned Program:	FY 2006	FY 2007	FY 2008	FY 2009
Prove-out prototype plasma arc technology for conventional ammunition and resource recovery potential.	1196	900		
Install and prove-out cryofracture demilitarization process for anti-personnel landmines and other munitions.	664	791		
Development of integrated cryofracture/plasma arc technology on a mobile platform.	195	150	150	200
Development of recycle/reuse technology for magnesium/aluminum.	1784	1949	1200	500
Develop, install and prove out of transportable alternative materials recovery capabilities for various energetic components.	125	100	100	
Multi-based propellant recovery technology application.	50	100	1364	1991
Development of advanced resource recovery/reuse technology for explosives.		194	1000	1000
Development of Technology for Demilitarization of insensitive munitions		100	600	900
Implementation of advanced cutting technology			206	242
The purpose of this Congressional Add is to support recovery of critically needed propellant ingredients from obsolete and/or waste gun propellant formulations. No additional funds are required to complete this project.	1250	2400		
Small Business Innovative Research / Small Business Technology Transfer Programs		194		
Total	5264	6878	4620	4833